

THE DISCOVERY OF *IRATINIA AUSTRALIS* – THE OLDEST KNOWN ANATOMICALLY PRESERVED AXIS BEARING AFFINITIES WITH CYCADALES

Spiekermann, R.¹, Jasper, A.², Siegloch, A.M.³, Guerra-Sommer, M.³ & Uhl, D.¹

¹Senckenberg Forschungsinstitut und Naturmuseum Frankfurt, Frankfurt am Main, Germany,
rafael.spiekermann@senckenberg.de

²Universidade do Vale do Taquari – Univates, Programa de Pós-Graduação em Ambiente e
Desenvolvimento, Lajeado, Brazil

³Universidade Federal do Rio Grande do Sul – UFRGS, Instituto de Geociências, Porto Alegre, Brazil

Recently, we proposed the new genus and species *Iratinia australis* Spiekermann, Jasper, Siegloch, Guerra-Sommer & Uhl. The taxon is based on a monoxyle, anatomically preserved axis from the Irati Formation, Kungurian of the Paraná Basin, Brazil. This specimen was interpreted as a lycopsid in a preliminary study published in the 1980s, but a detailed re-examination of its morpho-anatomical characteristics revealed that it has systematic affinity with Cycadales. *Iratinia australis* is the oldest known anatomically preserved vegetative axis bearing affinities with this particular botanical order. It provides evidence that the overall anatomy of cycad monoxyle axes, as well as the armour of leaf bases and the girdling leaf traces which are characteristic for Cycadales, were already established in the Kungurian. The fossil is the first record of an anatomically preserved cycad axis from the Permian of Gondwana, and together with some foliage impressions from *Cathaysia*, suggests that during the Cisularian Cycadales or their direct ancestors were already widely/worldwide distributed.